



Japan Sun Oil Company Ltd.

MADE IN JAPAN

SUNPAR[®] 2280

THE VERSATILE PARAFFINIC OIL A BOON FOR RUBBER INDUSTRY

(AHIGH VISCOSITY & HIGH FLASH POINT PARAFFINIC OIL)

“Sunpar” Oils are made by JAPAN SUN OIL COMPANY LTD. JAPAN through a special process by which they are highly refined and de-waxed.

Sunpar-2280 is suitable for Thermo set Elastomers like NR, IR, IIR, EPM & EPDM and also for Thermoplastic Elastomers Like SBS, SEBS & TPV's.

Sunpar-2280 has the highest viscosity in its class with Paraffinic fraction at 67% lowest Aromatic fraction of 5% and lowest sulfur content when compared with other competitive grades and hence it strikes a balance between compatibility, processibility, Color Stability, higher heat resistance, higher physical properties and above all reduces the requirement of Peroxide, Co-agents & curative dosage.

Salient Features:

1. High Viscosity – High Filler Loading:

High Viscosity of Sunpar-2280 (475cSt. at 40°C) enables easy processing of high Mooney EPDM rubbers which in turn takes in higher filler loading thereby simultaneously reducing the cost and giving smooth finish.

2. High Flash Point - Low Volatility:

Due to high refinement and de-waxing Sunpar -2280 has high Flash Point of 321°C hence weight loss at 280°C x 30 minutes is only 1.26% against 1.86% of other grades which is 32.2% lesser volatility. Due to this lesser volatility it eliminates emission during mixing and processing.

3. High Oxidation Resistance:

Due to High Paraffinic (67%) and Low Aromatic (5%) nature and presence of long side chain on the rings with high unsaturation, Sunpar-2280 has the highest Oxidation resistance & Heat Ageing resistance when compared with competitors grades.

4. Lower Demand For Peroxide & co-agents:

The Very Low “Aromaticity” Ca 5% and the lower Sulfur content of the Sunpar-2280 reduces the requirement of Expensive Peroxides and Co-agents for EPDM compound.

The same Physical properties could be achieved by reducing the dosage from 3 to 2 Phr.

5. High Color Stability – UV Resistance:

Sunpar -2280 is highly refined and contains higher level of saturation and lend higher “UV” resistance thereby gives higher color retention.

6.Low Temperature Flexibility:

With a pour point of (-)°9C Sunpar-2280 has better low temperature flexibility when compared to the grades of competitors available in the market.

7.FDA Approved Grade:

FDA approved ingredients should be used in the rubber compound, this is an essential requisite for the products to be exported to USA Sunpar-2280 complies to the FDA regulation of paragraph “C”. Hence could be used in EPDM rubber products made for the equipments of food industry and water line seals and gaskets.

Applications:

1.Thermoset Rubbers – EPM, EPDM, IR, IIR & NR

- Roof Membrane
- Cables
- Hoses
- Profiles
- Automotive Rubber Goods
- Sealants compared as process aids, coating agents.

2. Thermoplastic Elastomers:

The Sunpar 2280 is also an excellent choice for use with thermoplastic elastomers such as SBS, SEBS, TPE & TPV. It offers the thermoplastic producers a balance of compatibility, improved processability, colorability and low volatiles. compared to similar oils.

FDA Status

FDA approval is required to export products to the Europe Countries. So, the materials used in the products should conform to FDA regulations. This oil meets the FDA requirements of **Paragraph “C”**. If required, customer will be provided with the test certificate.

Specific Advantages:

Volatility

Sunpar 2280 generates the lowest amount of volatiles. In comparison, the competitive equivalent oils produces 28 to 48% more volatiles. Accordingly, Sunpar 2280 offers a more cost – effective solution to less evaporation loss to air and reduce employee exposure.

Peroxide Cure System:

The lower aromatic content of Sunpar 2280 is particularly significant in Peroxide Cured applications where it can reduce the curative loading and therefore, the cost of expensive Peroxide Curatives.

Research study shows that Peroxide dose can be reduced up to 30 – 40% when using Sunpar 2280.

Typical Properties of Sunpar-2280

Sr No	Paramater	ASTM Test method	Typical value	Remarks
1	Viscosity Index	D 2270	95	
2	Viscosity cSt @ 40°C	D 445	481	
3	Viscosity cSt @ 100°C	D 445	31.20	Higher Better- Less Volatile during processing/curing. Service life of product better/better heat ageing resistance
4	Flash Point °C	D 92	312	
5	Pour Point °C	D 5950	-12	Easy to use
6	Color	D 1500	5.0	Good
7	Gravity API	D 1250	27.3	
8	Density @ 15°C Kg/dm ³	D 4052	0.8905	
9	Acid No mgKOH/g	D 974	0.02	
10	Sulphur mass%	D 4295	0.15	Negligible – will not interfere with curing
11	Aniline Point °C	D 611	128.9	Low Aromatic content – Less dosage of Peroxide required. Oxidation esistance beeer. Beter color retenntion.
12	Molecular Weight g/mole	D 2502	690	
13	Refractive Index @ 20°C	D 1747	1.489	
14	Aromatic Content - (Ca%)	D 2140	4	Lower better
15	Naphthenic Content - (Cn %)	D 2140	25	
16	Paraffinic Content - (Cp%)	D 2140	71	Higher Better
17	Asphaltene	D 2007	0	
18	Volatility 107°C X 22 hrs Mass Loss	D 972	0.03	Lower than permitted Max
19	UV Absorption 260 nm	D 2008	1.82	
20	PCA Extract Content mass%	IP 346	< 0.4	Non Carcinogenic
21	FDA 21 CFR 178.3620 (C)		PASS	Can be used in products coming in contact with food

Typical Comparison of total Aromatic & Volatility

Product	Total Aromatics Mass% (D2007)	Volatility Mass% (D972)
Sunpar 2280	24.0	0.03
Competitor A	33.3	0.07
Competitor B	29.8	0.35
Competitor C	35.9	0.8

Comparative Volatile Weight Loss

Product	Weight Loss Mass% 30 min. @ 535°F	% Increase Relative to Sunpar 2280
Sunpar 2280	1.2607	-
Competitor A	1.6173	+28
Competitor B	1.7397	+38
Competitor C	1.8647	+48

Peroxide Loading VS. Total Aromatics

